

Sedum sp. from an altitude of 20,850 ft. In an earlier expedition to Kamat, F. Smythe found one plant at over 21000 ft. He threw it down to R. H. Holdsworth who was at the other end of his rope, but he failed to make the catch, and in the words of Holdsworth, "the adventurous crucifer, as its probably was, lost to science".

Later, Jayal (1956-57) in his 1955 Kamet Expedition reported two flowering plants collected by his party from an altitude of 21,000 ft. without giving their names. These plants are

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Ermania himalayensis (Camb.) O. E. Schultz (*Christolea himalayensis* Camb.; *Cheiranthus himalayensis* Camb.) (Cruciferae) and *Ranunculus lobatus* Jacq. ex Camb. (Ranunculaceae) now housed at the herbarium of the Forest Research Institute, Dehra Dun (Accession Nos. 118521 and 118522).

A perusal of the available records shows these to be the highest growing flowering plants collected from the Himalayas so far. Since this information is not readily available, we are bringing it to the notice of the readers.

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15. ADDITIONS TO POACEAE OF KARNATAKA STATE

Except for Fischer's account (1937) in the Flora of Presidency of Madras there is practically no detailed enumeration on the Poaceae of Karnataka. Recently Razi (1973) has enumerated 95 species from Bangalore district and Saldanha & Nicolson (1976) 135 species from Hassan district. Based on recent botanical explorations of selected districts of Karnataka by the workers in Botanical Survey of India, a few interesting new records of grasses have been sent for publication.

In the course of further studies, we have come across many species which are either new records or interesting from the distributional point of view. A critical study of the herbarium specimens as well as a perusal of

literature including the recently published floras reveals that the following species have not been recorded from Karnataka. *Arundinella intricata* has been recorded for the first time from Peninsular India. Species like *Aristida stocksii*, *Arundinella spicata*, *Arthraxon purandharensis* and *Ischaemum tumidum* which were regarded as restricted to Maharashtra State only, are now known to extend to Karnataka as well. Similarly *Garnotia courtallensis* earlier recorded from only Kerala and Tamil Nadu has been reported from Chikmagalur district (Karnataka). In the present paper aspects of distribution are discussed briefly.

All the specimens have been deposited in the regional herbarium of the Botanical Survey of India (BSI).

***Agrostis pilosula* Trin.**

Fischer reports it from Nilgiris and Pulney hills only and this has now been collected from Bababudan hills at a similar high altitude of 1200 m extending the area of distribution.

Chikmagalur district: Bababudan, *Raghavan* 132431.

***Aristida stocksii* (Hook. f.) Domin**

According to Bor (1960) the species is confined to the Concan and that "there is only a single gathering of the grass". However, this species, though infrequent, has been subsequently collected from Pune and Aurangabad districts of Maharashtra. There is a single misidentified sheet from Belgaum collected by Woodrow, which on scrutiny is referable to this species and hence it is a new report for Karnataka.

Belgaum district: Belgaum, *Woodrow* 816.

***Arthraxon purandharensis* Bharucha**

The type locality is from Purandhar and though Jain (1972) states that it has not been collected since the original collection, this species is quite frequent at Khandala ghats (Maharashtra) and has been recorded from Mt. Abu (Rajasthan) as well. This distinct species is normally misidentified or confused with *A. meeboldii* Stapf which it very closely resembles, hence the rarity. This has now been recorded from Chikmagalur and Coorg districts of Karnataka State thereby extending its distribution further south along the Western ghats.

Coorg district: Talacauvery, *A. S. Rao* 95138.

Chikmagalur district: Kemmangundi, *Rag-*

havan 132386, 132397, 132529; Abbe falls, *Raghavan* 132581, 132097; Balur, *Raghavan* 126132.

Shimoga district: Jog falls, *Raghavan* 134482.

***Arundinella intricata* Hughes**

This species has been so far recorded only from eastern India. The present report from Chikmagalur district is thus a new record for peninsular India and reveals discontinuous distribution.

Chikmagalur district: Abbe falls, *Raghavan* 134011.

***A. spicata* Dalz.**

This pretty annual has so far been regarded as endemic to Maharashtra only, but the recent collections extend its distribution further south along the Western Ghats.

Chikmagalur district: Balur, *Raghavan* 126111; Kemmangundi, *Raghavan* 125505; Kotegehar, *Raghavan* 126212A.

***Cymbopogon polyneuros* (Steud.) Stapf**

This grass is confined to the Nilgiris in peninsular India and has now been recorded from Chikmagalur district as well.

Chikmagalur district: Balur reserve forest, *Khisti* 120686.

***Echinochloa pyramidalis* (Lamk.) Hitchc. et Chase**

A native of tropical Africa, this has been recently introduced in India but without any precise locality. The present report from Coorg in the wild state is hence interesting.

Coorg district: Kanbite water tank, Sunti-koppa, *A. S. Rao* 86695.

***Eulalia fimbriata* (Hack.) O. Ktze.**

According to Bor (1960), the distribution extends to "South India" but there is no re-

cord of its collection either by Fischer or in any recently published flora. Cooke (1908) reports it for Maharashtra and the present collections thus extend it to Karnataka also.

Chikmagalur district: Bharatibyle, *Khisti* 120850, Kudremukh, *Raghavan* 134289.

Garnotia courtallensis (Arn. et Nees) Thw.

It has been so far recorded from Kerala and Tamil Nadu at altitudes of 1800-2000 m and this has been collected from Bababudan ranges from similar elevations.

Chikmagalur district: Bababudan, *Raghavan* 125894; Dhupagagiri, *Raghavan* 125650; Bhagavati, *Raghavan* 126369.

Isachne globosa (Thunb.) O. Ktze. var. **effusa** (Trin. ex Hook. f.) Senaratna.

Singh & Deshpande (1973) had reported this variety from Goa as a new record for India. However, though infrequent, this species also occurs in Karnataka, extending its distribution along Western Ghats.

North Kanara district: Belvatgi, *Arora* 43705. *Coorg district*: Kalhalla, *Arora* 42084.

Ischaemum tumidum Stapf ex Bor

As to the distribution of this remarkable

grass Bor (1951) mentions "Concan" (Madras State) and Khandala (Maharashtra). A critical study of the herbarium specimen records that this species has so far been collected only from Maharashtra. Fischer has also not included it for Madras Presidency, but the present collections indicate its occurrence in Karnataka as well.

North Kanara district: Sirsi, *Jain* 29889.

Shimoga district: Hosuru, *Raghavan* 68050.

Coorg district: Makut, *A. S. Rao* 95319.

Microstegium ciliatum (Trin.) A. Camus

This species is quite common along the Nilgiris and Palni hills and the present collection from Chikmagalur at an elevation of 1400 m confirms its occurrence on hill tops.

Chikmagalur district: Mulainagiri, *Raghavan* 134113.

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